Analyzing the Internet of Things Investment Landscape

A data-driven look at financing trends, investors, and hot markets within the IoT ecosystem
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IoT Landscape and Disruption
Internet of Things Startups Are Attacking….Everything

From agriculture to fitness to the smart home and much more, the Internet of Things is everywhere.

Among tech buzzwords, Internet of Things is currently one of the favorites (Big Data is up there too). But the Internet of Things or IoT is not really an industry and is more of a theme with IoT companies attacking a wide variety of industry challenges. We put together a map of IoT startups that are attacking different industries. While companies like Lockitron and Canary aim to automate your home, Proteus Digital Health and AdhereTech are trying to revolutionize medicine by improving patient monitoring. Below are some of the areas that IoT startups are attacking with a small sampling of companies for each IoT segment.
Disrupting Honeywell: The Startups
Unbundling Honeywell in the Smart Home

From August to Canary to Simplisafe, a host of home automation startups are unbundling $81B conglomerate Honeywell in the home.

The promise of the fully connected smart home is arriving fast driven by a growing number of ‘smart home’ startups – companies offering services for your home ranging from home security, temperature management and lighting controls. These smart home companies are a unique combination of big data, hardware design and internet and mobile software. Many are also considered Internet of Things companies.

One way to think about the rise of smart home startups attacking different verticals is the ‘unbundling’ of one of the largest players in home consumer products, Honeywell (NYSE: HON, Mkt Cap: $81.2B). Honeywell’s established product line for the home spans from thermostats to door chimes to fans & heaters.

As tech invades home solutions, Honeywell’s product portfolio is getting attacked by a number of startups. The graphic on the next page shows the home product section of Honeywell’s own website and the startups attacking it ranging from home monitoring and security firms including Canary, Simplisafe and Leeo, smart thermostats like Netatmo and Ecobee and smart locks including August, Lockitron and Ring.
Venture investors are betting that startups can successfully take on titans in the home including Philips and Honeywell by attacking them at a product/service level. According to CB Insights data, smart home startups took $454M in investor funding in 2014, an increase of 57% on a year-over-year basis. Among the largest deals in the space over the past six months include a $38M Series B from Bessemer Venture Partners, Comcast Ventures and Qualcomm Ventures to August and a $31.8M Series B to connected home software platform Zonoff from investors including Grotech Ventures and Valhalla Partners.

**Smart Home Funding Trend**

$M, 2012-2014

- **2012**: $265.9
- **2013**: $289.9
- **2014**: $454.1
Funding and Exits
Funding to IoT Startups Has More Than Doubled In Six Years

This year is on track to surpass last year’s record-breaking funding to Internet of Things startups.

The Internet of Things is the next major phase in computing, following on the heels of the PC and mobile eras. According to one estimate, the IoT will encompass between 20 and 30 billion connected devices by 2020.

Using CB Insights data, we examined investments in IoT startups, including deals and funding, investments by stage, most well-funded companies, and active investors. In the past six years, the IoT space has attracted a cumulative $7.4B in investment over 887 deals.

IoT startups include companies commercializing connected objects, appliances, sensors, and devices, along with supporting infrastructure and software. A few of the categories include medical devices, connected home appliances, and smart building materials.

Yearly IoT funding

Funding to IoT startups has grown at a steady clip, more than doubling in 5 years from $768M in 2010 to over $1.9B in 2014. Yearly deal count soared from 91 in 2010, to 221 in 2014. And, at the current run-rate, 2015 is on track to eclipse last year’s record-breaking funding year, despite the deal count being down significantly from last year.
Quarterly deals and dollars

The quarterly history offers a more detailed look at the rise in IoT funding. There has been $500M in investment in private IoT companies 4 of the last 6 quarters.

Deal count has also grown substantially. In 2010 and 2011, deal count hovered around 25 in each quarter. In 2014 and 2015, the count has jumped to a range of 34 to 65 deals each quarter. The top funding quarter was Q2’15 with $626M in funding, bolstered by a $75M Series B to drone manufacturer DJI Innovations, and a $45M Series F to mixed-reality gaming company Orbotix.
Deal and dollar share by investment stage

The shares of IoT deals by investment stage have held relatively constant, with a trend towards early stage deals that peaked in 2013, with Seed and Series A deals combining for 62% of deal share. That share has since retreated a bit to 53% in 2015’s first three quarters.

Mid-stage companies generally saw about one quarter of deals between 2010 and Q3’15, but climbed up to 20% in 2015 year-to-date. And late stage deals accounted for between 7% and 14% of deals.

In terms of dollar share, however, deals don’t skew toward the early stage.

Mid-stages deals account for the greatest dollar share in every year except 2012, and so far in 2015 mid-stage accounts for 52% of IoT funding. In 2014 and 2015 YTD, late-stage funding (Series D and Series E+) accounted for 22% and 31% of dollars, respectively.
Most well-funded companies

The most well-funded companies represent a diverse range of categories, including IoT infrastructure, cloud platforms, and consumer wearables.

The most well-funded company was View, maker of an internet-connected smart window and environmentally-friendly building glass. View recently raised $150M in a Q3’15 Series G round.

View was followed by Proteus Digital Health, a company that makes ingestible sensors to measure medication adherence and physiological responses. Proteus most recently raised $52M in a second Series G round in Q3’14.

The third most well-funded company was Jawbone, a wearables and smart electronics maker. The company most recently took on a $300M debt round in Q2’15.

See the full list on the next page.
Active investors

Intel Capital tops the list as the most active investor in IoT startups, followed by Qualcomm Ventures. Both companies’ venture arms have been active investors in wearables startups, which as IoT devices are typically powered by small chips.

This year, Intel Capital led a round to BodyLabs, a maker of 3D body-scanning sensors, and also invested in Sano Intelligence, a biometric sensor developer. Intel Capital has also invested in wearables companies and made bets on IoT infrastructure startups like Stratoscale, Bocom Intelligent Network Technologies, and SigFox.

Next most active was Qualcomm Ventures, which recently invested in the drone company 3D Robotics, along with Whistle Labs, maker of a dog wearable. Qualcomm Ventures also invested in sensor networks developed by Panoramic Power, Placemeter, and Streetline, which all aim to harness the IoT to measure traffic and increase the efficiency in public spaces.

The third-most active investor was Foundry Group, the Boulder, Colorado-based early-stage venture fund. Foundry Group has made multiple bets on IoT-related hardware investments: Fitbit, LittleBits, and MakerBot. (Fitbit went public in June at a valuation of $4.1B, and MakerBot was acquired in Q3’13 at a $403M valuation.)
Drilling into just early-stage investments we see many familiar names on the most active investors list. Once again, Intel Capital is the leading early-stage investor, followed by Khosla Ventures, which notably invested in enterprise IoT companies including Helium and Quanttus. In third was Foundry Group, which notably invested in the Q2’15 seed round for ivee, a home voice assistant.
After reaching an all-time high in each of the past two quarters, drone funding showed no sign of slowing down, reaching $139M on 20 deals in Q3’15. Deal count also reached a third-straight all-time quarterly high.

The funding total was buoyed by the $60M financing to Yuneec, a large drone manufacturer in China, as well as Series B financings to EHang ($42M) and Skycatch ($22M).

Drone companies have now raised over $300M in equity financing in the first three quarters of 2015. The full funding trend below.
According to CB Insights data, investment in 2014 to the nascent drone industry topped $108M across 29 deals. Year-over-year funding increased 104% as venture firms including Lightspeed Venture Partners, GGV Capital and Kleiner Perkins among others jumped into the space with sizable bets.

Funding to drone startups increased 104% as venture firms including Lightspeed Venture Partners, GGV Capital and Kleiner Perkins among others jumped into the space with sizable bets.
Follow-on investments bulk up for drone startups

Between 2010 and 2012, there were fewer than five VC deals to drone companies. But as hype and interest catalyzed for the space (Amazon famously revealed plans for drone delivery in December 2013), investment has grown. There are now at least 10 drone companies with Series A funding or later including Ehang, Skycatch and Kespry. A handful of companies have raised Series B financing including 3D Robotics and Airware.

The chart below highlights deal activity in the drone space by stage over the last five years. To date, venture investment has not touched the late-stage (Series D+) in the drone space yet which is primarily a function of the industry’s relative immaturity.

<table>
<thead>
<tr>
<th>Amount invested ($M)</th>
<th>Total</th>
<th>Seed / Angel</th>
<th>Series A</th>
<th>Series B</th>
<th>Series C</th>
<th>Series D</th>
<th>Series E+</th>
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</thead>
<tbody>
<tr>
<td>0-1</td>
<td>12 deals</td>
<td>$5M</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1-5</td>
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<td>$19M</td>
<td></td>
<td></td>
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<td>5-10</td>
<td>4 deals</td>
<td>$37M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-25</td>
<td>4 deals</td>
<td>$68M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-50</td>
<td>1 deals</td>
<td>$30M</td>
<td></td>
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</tbody>
</table>
The most well-funded drone companies

Of the current crop of drone startups, Airware is the most well-funded having raised $40M from firms including First Round Capital, Andreessen Horowitz and Felicis Ventures in addition to a strategic investment from GE Ventures. 3D Robotics is a close second, having raised $35M from investors including True Ventures, O’Reilly AlphaTech Ventures and Mayfield Fund. A compilation of the top 5 most well-funded private drone startups is below:
FitBit’s IPO today represented a huge win for its venture capital investors including True Ventures (22.9% pre-IPO stake), which notched its first portfolio IPO ever, Foundry Group (28.9%), SoftBank Capital (5.6%), Felicis Ventures (less than 5%) and others. How huge?

According to CB Insights data, FitBit’s IPO ranked as the top venture-backed wearable exit at its offering price valuation. At $4.1B, FitBit’s IPO was 32% larger than GoPro’s. GoPro was backed by US Venture Partners, Walden International and Steamboat Ventures.

As the chart below highlights, FitBit also tops four other recent exits in the wearable-tech space including Facebook’s $2B acquisition of virtual-reality product Oculus VR, which benefited backers Spark Capital, Matrix Partners, Formation 8, and Andreessen Horowitz.

Here is the full list of top exits in the wearable-tech space by valuation over the last five years:
Smart Money and Corporates
Many corporate investors and smart money VCs have placed significant bets on the Internet of Things industry, which is expected to see nearly $2B in funding through the end of 2015.

Which firms are most active? We used CB Insights data to rank VCs by their unique IoT investments over the past 5 years.

Intel Capital tops the list as the most active investor in IoT startups, followed by Qualcomm Ventures. Both small-chip companies’ venture arms have been active investors in wearables startups and sensor companies. Since Intel and Qualcomm are involved in designing and/or manufacturing ever-smaller chips to power mobile devices, this area likely offers them strategic value.

• This year, Intel Capital led a round to BodyLabs, a maker of 3D body-scanning sensors, and also invested in Sano Intelligence, a biometric sensor developer. Intel Capital has also invested in wearables companies and made bets on IoT infrastructure startups like Stratoscale, Bocom Intelligent Network Technologies, and SigFox.
• Qualcomm Ventures recently invested in the drone company 3D Robotics and Whistle Labs, maker of a dog wearable. Qualcomm Ventures also invested in sensor networks developed by Panoramic Power, Placemeter, and Streetline, which measure energy usage and traffic in public spaces.
The third-most active investor was Foundry Group, the Boulder, Colorado-based early-stage venture fund. Foundry Group has made multiple bets on IoT-related hardware investments: Fitbit, LittleBits, and MakerBot. (Fitbit went public in June at a valuation of $4.1B, and MakerBot was acquired in Q3’13 at a $403M valuation.)
Internet of Things startups have attracted over $7.4B in cumulative investment over 887 deals since 2010. As the IoT continues to transform business categories such as auto, medicine, and heavy manufacturing, it’s important to know where to top VCs are placing their bets.

**Quarterly trends in smart money IoT investment**

Looking at quarterly trends, the IoT space saw an uptick in deals involving the top 20 smart money VCs beginning in 2011. However, smart money participation peaked in Q4’14, with $332M in funding. Since then, these top investors have cooled off on IoT bets.

The Q4’14 peak was fueled largely by Sonos’ $130M Series E round (Index Ventures), and the $40M Series C round to Misfit Wearables, a wearables company that was later acquired by Fossil Group (Khosla Ventures and Founders Fund were backers of Misfit).

At the current run rate, 2015 will mark a 3-year low for funding that includes smart money VC participation. And Q3’15 saw the lowest investment dollars since Q2’10, with only 3 deals including the top VCs. Comparatively, the previous 10 quarters ranged between 5 and 10 deals with their involvement.

**Khosla Ventures, Kleiner Perkins, and Andreessen Horowitz are the top smart money VC investors in IoT.**

November 19, 2015

Here’s Where Smart Money VCs Are Placing Their IoT Bets
Visualizing smart money IoT investments

Another useful way to visualize smart money strategies is to use CB Insights’ Business Social Graph which shows how top investors and target companies are related. The spot for most active smart money VC firm in the IoT was a tie between Khosla Ventures and Kleiner Perkins Caufield & Byers, with Andreessen Horowitz not too far behind. All these investors backed 15 or more unique IoT companies. Interestingly, all three firms were investors in the fitness band maker Jawbone.
• **IoT Infrastructure**: Sensor development, networking, software, and big data for building out the IoT and supporting its many applications. Examples here were Electric Imp, Stratoscale, and mCube.

• **Connected Home**: Connecting home appliances and devices, such as Ring’s connected doorbell system.

• **Connected City**: IoT hardware and software for efficient public spaces. Placemeter, and Streetline, for example, target the sidewalks, traffic, and parking problems.

• **Healthcare**: These may be platforms and/or sensors (wearable or ingestible) intended to harvest clinical data. Smart money-funded startups in this space included Airstrip Technologies, Corventis, and Cellscope.

• **Wearables**: A broad category of wrist, body, apparel, and headset-mounted sensors that we’ve covered in great detail. Startups here include fitness band maker Jawbone, smartwatch maker Pebble Technology, and advanced biometric sensors such as InteraXon’s brainwave reader.

• **Smart Energy systems**: Platforms for efficient energy usage, including smart money-funded startups like Enlighted and PlotWatt, along with now-exited SynapSense, Nest Labs, and eMeter.

• **Industrial IoT (IIoT)**: Connecting factories, equipment, and machinery for manufacturing and capital-intensive industries such as oil production, agribusiness, transportation, and logistics. Smart money-funded startups here include oil-and-gas focused Tachyus and industrial internet platform Parstream.

• **Connected Car**: An IoT subcategory focused on the future of auto. Metromile and Inrix are examples here.

• **Retail Tech**: Startups aiming to track and enhance the retail experience through in-store technology and IoT systems. Theatro and Estimote are smart money-backed companies in the space.
Corporate Investors Participate In A Record Number Of IoT Startup Deals In 2015

At the current run rate, 2015 will nearly double last year’s dollar total, at 89% year-over-year growth in funding.

Home appliances, medical devices, and smart building materials are just a few of the categories in which the Internet of Things is gaining significant momentum. Funding to IoT startups has more than doubled over the past 6 years. We used CB Insights data to identify top corporate investors in IoT startups, and tracked investments and deals.

Corporate deals and dollars

Over the past 6 years, corporate investors, i.e. corporations and their venture arms, have joined in rounds that funneled $3.2B into the IoT space, across a total of 266 deals. At the current run rate, 2015 will nearly double last year’s dollar total for rounds involving corporates, at 89% year-over-year growth in funding. Deal count is on track to quadruple since 2010.
Quarterly deals and dollars

Diving into the quarterly trends, the first quarter with more than 10 deals was Q2’13, which included notable rounds to Enlighted, which develops energy-saving smart home and building systems ($20M Series C); as well as late-stage rounds to smart pill company Proteus Digital Health ($45M Series F) and smart-glass maker View ($60M Series E). Since that quarter, the count of deals involving corporates has remained in the double digits, ranging from 11 to 28.

This past quarter Q3’15 was the highest in funding through deals involving corporates, thanks in large part to a $150M Series G to View, along with $36M in financing to Sensity Systems, a lighting tech startup.
Corporate financing by stage

Early-stage startups took an increasingly large share of deals involving corporates from 2010 to 2013. Seed/Angel and Series A deal share peaked at 57% in 2013, but began to trend down and slid to 37% in 2015 year-to-date (YTD). Meanwhile, Series B/Series C deal share went from 28% to 41% between 2013 to 2015 YTD.

The dollar share by deal stage skews much more toward the middle and later stages, and varies more. Aside from a lofty year for early-stage deals in 2014, when Seed and Series A accounted for 33% of dollar share, early-stage only accounted for 4% to 16% of annual dollar share.

Middle-stage deals accounted for between 37% and 84% of dollars, and 51% in 2015 YTD. And later stages accounted for 7% to 56% of dollars, and 30% in 2015 through Q3’15.
Most active corporate investors

• Intel Capital tops our most active corporate list, with investments in roughly 30 IoT companies. This year, Intel invested in the $10M Seed round for Sano Intelligence; along with the $8M Series A for Body Labs, maker of 3D body scanning sensors; among other investments.
• Second most active was Qualcomm Ventures with a recent investment in drone company 3D Robotics, along with a host of other wearable and smart-electricity grid companies.
• GE Ventures / Healthcare was the third most active IoT investor. GE most recently invested in lighting tech startup Sensity Systems as part of a $36M deal in July.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Investor</th>
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<tbody>
<tr>
<td>1</td>
<td>Intel Capital</td>
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<tr>
<td>2</td>
<td>Qualcomm Ventures</td>
</tr>
<tr>
<td>3</td>
<td>GE Ventures / Healthcare</td>
</tr>
<tr>
<td>4</td>
<td>Cisco Investments</td>
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<tr>
<td>5</td>
<td>Samsung Ventures</td>
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<tr>
<td>6</td>
<td>Google Ventures</td>
</tr>
<tr>
<td>7</td>
<td>Alexa Fund</td>
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<tr>
<td>7</td>
<td>Microsoft Ventures</td>
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We used CB Insights’ Business Social Graph, which shows how top investors and target companies in any industry are interrelated, to visualize these corporates’ investments.

**Most active early-stage corporate investors**

Drilling into early-stage deals, we see many familiar names on the most active investor list. Once again, Intel Capital tops the list, followed again by Qualcomm Ventures.

Third most active in early stage IoT investment was the Alexa Fund, Amazon’s new investment arm named for its Alexa product (the cloud-based voice-activated digital assistant powering the Amazon Echo). The $100M fund opened for business at the end of Q2’15 and focuses on voice-controlled hardware and software. So far, its IoT investments have included Rachio, a connected irrigation system and Scout Security, a home security device, among others.
Unsurprisingly, the IoT startups receiving corporate investments were overwhelmingly based in California. Some lesser known yet well-funded IoT companies based outside of Silicon Valley included Chrono Therapeutics (Massachusetts), Phunware (Texas), Impinj (Washington state), and Zephyr Technology (Maryland).
October 13, 2015

Intel, Qualcomm, And Foxconn Are Among The Corporates Investing In Wearables Startups

Magic Leap’s mammoth $542M round in Q4’14 drew in corporate investors including Google, Qualcomm Ventures, and Legendary Entertainment.

Wearables startups have attracted over $2.2B in funding over the past five years, as noted in our wearables industry funding overview. Corporate investors are taking note, and names like Comcast Ventures and Samsung Ventures are placing significant bets in the space. The semiconductor industry in particular has driven corporate investment in wearables, as we’ll see below.

We used CB Insights data to track corporate funding into wearable computing, identify top corporate VCs investing in wearables startups, and dig into financing trends.

Corporate deals and dollars

Over the last 5 years, corporate investors have joined in rounds that funneled $1.34B into the space, across a total of 54 deals.

Funding and deal activity involving corporates are projected to shrink in 2015 after multi-year highs in 2014.

The 2014 peak was mostly due to Magic Leap’s round ($542M in Q4’14), which took Series B funding from corporates including Google, Qualcomm Ventures, and movie studio Legendary Entertainment. Even putting aside that half-billion dollar round, 2014 saw $185M of investment, well ahead of this year’s projected funding total.
Quarterly deals and dollars

The quarterly breakdown gives a clearer picture of funding trends. 2015 has seen quarter-over-quarter increases in funding involving corporates, with $31M in Q1’15, $36M in Q2’15, and $48M in Q3’15. But that’s down significantly from the outlier quarter in Q4’14, driven by Magic Leap’s funding.

The top quarter for deal count was Q2’14, at 9 deals, including notable rounds to Ineda ($17M Series B) and OMsignal ($10M Series A). Deal count has remained at or above 4 deals per quarter since. Q2’14 was the fourth-highest quarter for funding involving corporates, at $81M.
Corporate financing breakdown by round

The distribution of corporate wearables deals by stage illustrates the rise of early-stage investment. Seed and Angel stages were absent from 2010 to 2012, but jumped to 33% in 2013 and are at 31% in 2015 year-to-date. Early-stage deals (Seed/Angel and Series A) currently account for over half of all corporate wearables investments in 2013, 2014, and 2015 year-to-date.

Most active corporate investors

- Intel Capital tops our most active corporate list with close to 10 investments in wearables companies. Intel’s investment arm has stakes in startups including Avegant and Thalmic Labs. (Intel itself has also acquired several wearables companies: Over the past 18 months, Intel has acquired smart eyewear manufacturer Recon Instruments’ and health-tracking BASIS Science’s wristbands.)
- Qualcomm Ventures was second-most active with investments including Magic Leap, Fitbit (the latter company exited through this year’s IPO), and a $350K Seed round to Ollo Wearables.
- Third most active was Foxconn Technology Company, with investments in less than 5 companies. Foxconn most recently invested into the $5.3M Series A round for Tokyo-based Lemonade Lab. Foxconn recently announced plans to boost its early experiments in chip manufacturing.
We used CB Insights’ Business Social Graph, which shows how top investors and target companies in any industry are interrelated, to visualize these corporates’ investments.

Geography of corporate investments in wearables

The United States saw the majority of corporate wearables deals over the past five years. Coming in second is Canada, home to Nymi and OMsignal, among others. Outside of North America, some wearables companies included SnowCookie (Poland), Moff (Japan), and Performance Lab (New Zealand).
Domestically, the bulk of wearables investments were made to startups in California. Lesser-known yet well-funded wearables companies based outside of Silicon Valley included Ringly (New York), Pristine (Texas), and Polyera (Illinois).
Want access to the underlying data that made this white paper?

Get the Data